

CLAIMS:

1. A packet switching system comprising:

one or a plurality of local units each accommodating a plurality of packet circuits, each of said local units including label conversion means, a self-routing switch and control means for performing call processing control in respect of a control packet, said label conversion means being operable to generate output port information of said switch from a logic channel-on said packet circuit and said self-routing switch being operable to effect self-routing on the basis of the output port information; and

a tandem unit including at least one self-routing switch for interconnecting said local units;

each of said local units further including means for setting, between said tandem unit and a destination-side local unit, the same logic channel as that between an originating-side local unit operative for information transfer and said tandem unit in respect of a call destined for a local unit other than this local unit and means, operable in the originating-side local-unit for information transfer, for inserting output port information of the self-routing switch inside said tandem unit into a packet destined for the local unit other than this local unit, whereby in said tandem unit setting of logic channel conversion information is not required to be done and even when-any control signal packet from said originating-side local unit arrives at said tandem unit, said packet is transferred to said destination-side local unit without undergoing call processing control.

2. A packet switching system according to Claim 1 wherein said destination-side local unit operative for information transfer is so constructed as to determine a logic channel of a reception call, whereby different logic channels are allotted to calls from a plurality of different local units so that logic connection may be identified by only a logic channel number VCI without resort to said originating-side local unit.

3. A packet switching system according to Claim 1 wherein when a plurality of packet circuits exist between the originating-side local unit and destination-side local unit, said originating-side local unit is so constructed as to transfer to said destination-side local unit a start signal including a circuit use condition between said originating-side local unit and tandem unit, and said destination-side local unit is so constructed as to select a circuit in accordance with said use condition and a circuit use condition between said destination-side local unit and tandem unit and transmit a start completion signal to inform said originating-side local unit of the selected circuit.

4. A packet switching system comprising:
a plurality of local units each accommodating plurality of packet circuits, each of said-local units including label conversion means, a self-routing switch and control means for performing call processing control in respect of a control packet, said label conversion means being operable to generate output port information of said switch from a logic channel on said packet circuit and said self-routing switch being operable to effect self-routing on the basis of the output port information; and

a tandem unit including at least one self-routing switch for

interconnecting said local units;

each of said local units further including means for setting, between said tandem unit and a destination-side local unit, the same logic channel as that between an originating-side local unit for information transfer and said tandem unit in respect of a call destined for a local unit other than this unit and means, operable in the originating-side local unit operative for information transfer, for inserting output port information of the self-routing switch inside said tandem unit into a packet destined for the local unit other than this local unit;

at least two of said plurality of local units accommodating packet circuits which are of the same outgoing route circuit;

each of said two local units having means for storing the bandwidth allotment state in respect of each outgoing route so that a local unit originating an outgoing route call may select a local unit which accommodates a circuit of the outgoing route permissible for allotment.

5. A packet switching system according to Claim 4 wherein each of said at least two local units has means operable to indicate said bandwidth allotment state in terms of at least one threshold value and when said threshold is exceeded upon setting of outgoing route call or release of outgoing route call, inform all of the other local units that said threshold is exceeded.

6. A packet switching system according to Claim 5 wherein said threshold value is different for the time that the outgoing route call setting is effected and the time that the outgoing route call release is effected.

7. A packet switching system according to Claim 6 wherein desired one of said two local units transmits said bandwidth allotment state in respect of each outgoing route periodically to all of the other local units.

8. A packet switching system comprising:
one or a plurality of local units each accommodating a plurality of packet circuits, each of said local units including label conversion means, a self-routing switch and control means for performing call processing control in respect of a control packet, said label conversion means being operable to generate output port information of said switch from a logic channel on said packet circuit and said self-routing switch being operable to effect self-switching on the basis of the output port information; and
a tandem unit including at least one self-routing switch for interconnecting said local units, and at least one self-routing switch connected to a trunk network or to said trunk network and at least one of said plurality of local units, whereby a packet is switched which is present in a call between local units, a leaving and connecting call transmitted from one local unit to said trunk network, an incoming connecting call from said trunk network and destined for one local unit and a call from said trunk network and subjected to routing to a different trunk network without arriving at said packet switching system.

9. A distributed type switching system comprising:

at least one local unit accommodating a first incoming/outgoing circuit;

and

at least one tandem unit connected to said local unit through a second incoming/outgoing circuit;

said local unit including call setting means accommodating said first incoming/outgoing circuit to said switching system and having the function to set a call from said first incoming/outgoing circuit, and header conversion means having the function to add information contained in the header of a fixed-length block transmitted to said second incoming/outgoing circuit and indicative of a local unit to be connected;

said tandem unit including self-routing means having the self-routing function to switch the fixed-length block in accordance with the information contained in said header of said fixed-length block transmitted through said second incoming/outgoing circuit and indicative of the local unit to be connected, so as to transmit said fixed-length block to the local unit to be connected which is designated by said information;

said second incoming/outgoing circuit being operative to transmit the fixed-length block having said header and an information field, said header containing said information indicative of the local field to be connected and said information field containing information transmitted from said first incoming/outgoing circuit.

10. A distributed type switching system comprising:

a plurality of local units; and

a plurality of inter-unit circuits connected to said local units;

each of said local units including call setting means accommodating a local circuit and an inter-unit circuit and having the function to set a call from said local circuit, and header conversion means having the function to add information contained in the header of a fixed-length block connected to said inter-unit circuit and indicative of a local unit to be connected;

said inter-unit circuit being operative to transmit the fixed-length block having said header and an information field, said header containing said information indicative of said local unit to be connected and said information field containing information transmitted from said local circuit.

11. A distributed type switching system comprising:

a plurality of local units accommodating external connection lines connected to another switching system or subscribers; and

at least one tandem unit for mutually connecting said plurality of local units by internal connection lines;

each of said local units having conversion means for converting a fixed-length packet incoming from an external connection line into a fixed-length packet containing an identifier which designates an output port of said tandem unit and delivering, as connection control information, the converted -packet to an internal connection line connecting said tandem unit and said local unit;

said tandem unit having self-routing means for relaying the incoming packet to another internal connection line selected in accordance with the identifier of

said incoming packet, whereby the packet from one local unit is relayed to a different local unit through said tandem unit.

12. A distributed type switching system according to Claim 11 wherein said conversion means has means for adding as said connection control information, an identifier for specifying an inter-unit connection port of the different local unit operable to receive a fixed-length data block, to said fixed-length data block.

13. A distributed type switching system according to Claim 12 wherein said inter-unit connection port specifying identifier is delivered along with said fixed-length data block.

14. A distributed type switching system comprising:
at least one local unit;
at least one tandem unit; and
an inter-unit circuit for mutually connecting said local unit and tandem unit;
each local unit accommodating local circuits and inter-unit circuits and transmitting a block of fixed-length to an inter-unit circuit;

said tandem unit including self-routing means having the self-routing function to switch a fixed-length block in accordance with information contained in the header of the fixed-length block and indicative of a local unit to be connected, so as to

transmit said fixed-length block to the local unit to be connected which is designated by said information; and

said inter-unit circuit being operative to transmit the fixed-length block having said header and an information field, said header containing said information indicative of the local field to be connected and said information field containing information transmitted from said local circuit.